10-4-2004

Check seed quality at harvest

X. B. Yang
Iowa State University, xbyang@iastate.edu

Check seed quality at harvest

Abstract
This growing season, diseases caused by *Cercospora* fungi were widespread in Iowa. There were two*Cercospora* species, one causing frogeye leaf spot and another causing *Cercospora* leaf blight. Frogeye leaf spot occurred locally in southern Iowa and *Cercospora* leaf blight was widely spread throughout Iowa. In some cases, *Cercospora* leaf blight has been called "sunburn." Because fungi of both diseases can infect seeds at harvest, it is likely that soybean from some fields show seed discoloration, which happened two years ago in northern Iowa. This article addresses the seed quality issue of this fall.

Keywords
Plant Pathology

Disciplines
Agricultural Science | Agriculture | Plant Pathology

Check seed quality at harvest

This growing season, diseases caused by *Cercospora* fungi were widespread in Iowa. There were two *Cercospora* species, one causing frogeye leaf spot and another causing *Cercospora* leaf blight. Frogeye leaf spot occurred locally in southern Iowa and *Cercospora* leaf blight was widely spread throughout Iowa. In some cases, *Cercospora* leaf blight has been called "sunburn." Because fungi of both diseases can infect seeds at harvest, it is likely that soybean from some fields show seed discoloration, which happened two years ago in northern Iowa. This article addresses the seed quality issue of this fall.

Cercospora leaf blight is caused by *Cercospora kukuchii*. Some isolates of the fungi can infect seeds and some do not. Infected seed have a purple discoloration and is called **purple seed stain**. Depending on the level of foliar infection, the level of seed infection is different. The disease is easy to identify by a mottled purple-to-orange discoloration of the uppermost leaves. The leaves also have a leathery appearance. When soybean plants are approaching maturity, infected leaves turn orange or bronze.

Purple seed stain.

Plants with **frogeye leaf spot**, which is caused by *Cercospora sojina*, also can cause seed quality problems. Fungus of frogeye leaf spot is a close relative of the one causing *Cercospora* leaf spot. The fungus infects seed, and consequently, the seed coat of infected seeds turns a grayish color. If you found severe foliar symptoms of frogeye during the summer, check the seed quality. For symptom identification of the two diseases, refer to the previous issue [1] of the *Integrated Crop Managment* newsletter. If you did not scout your soybean in the summer, discoloration of your beans provides clues of what happened.

Seed infection by *Cercospora* fungi may cause poor seed vigor and reduced germination. Beans with substantial amounts of discoloration should not be saved for seed because of the seedborne nature of these diseases.

If infected seeds are used, the disease can be introduced, which could cause foliar infections. This summer, I saw a field that was out of soybean production for years, but had widespread *Cercospora* leaf blight, an indication of introduction from using infected seed.

Keep in mind that not all *Cercospora* strains causing leaf blight will infect seeds. Use of quality seed is a measure of preventing this disease. Although there is no quantitative measurement on how much seed discoloration is a threshold to discard a seed lot from use, it is best not to use severely discolored seeds. Besides not using infected seeds, we should also use tillage to reduce infested debris. The two fungi also can survive on infested soybean residues, which become a source of inoculum in the next soybean crop.

White mold, a fungus which also infects soybean seeds, was prevalent in the eastern half of Iowa this growing season. Infected seeds are light, shriveled, small in size, and whitish in color. With the regular gravity clean process seed processing plants use, infected seeds can be separated from healthy seed. Therefore, it should not be a production concern when you purchase seeds from a quality company. However, if seeds are brown bagged from a white mold infected field, these seeds can spread this disease.

This article originally appeared on page 119 of the IC-492(21) -- October 4, 2004 issue.
